

Claims:

1. A tool in a packaging machine, which comprises as its heating element a first shaped article (1), preferably a plate, with at least one electrically conductive track (2) of any desired length, the first shaped article (1) being arranged, preferably clamped, between a second shaped article (5) and a third shaped article (6), which are both preferably plates, the second shaped article (5) being a working tool, in particular a sealing frame, a thermoforming mould or a heating plate, characterised in that the material, the geometry and/or the arrangement of the electrically conductive track (2) is so selected that any desired temperature distribution may be achieved in the second shaped article (5).
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2. A tool according to claim 1, characterised in that the first shaped article (1) comprises a plurality of electrically conductive tracks (2), which are arranged next to and/or above one another and are supplied jointly or separately with voltage.
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3. A tool according to either one of the preceding claims, characterised in that the width (3) of the track (2) amounts to 0.3 - 30 mm, preferably 0.4 - 3 mm, particularly preferably 0.45 - 2 mm.
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4. A tool in a packaging machine, which comprises as its heating element a first shaped article (1), preferably a plate, with at least one electrically conductive track (2) of any desired length, the first shaped article (1) being arranged, preferably clamped,
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- 22 -

between a second shaped article (5) and a third shaped article (6), which are both preferably plates, the second shaped article (5) being a working tool, in particular a sealing frame, a thermoforming mould or a heating plate, characterised in that the electrically conductive tracks (2), which are arranged next to and/or above one another, are supplied with voltage separately from one another in such a way that any desired temperature distribution may be achieved in the second shaped article (5).

5. A tool according to any one of the preceding claims, characterised in that each of the electrically conductive tracks (2) is individually controllable.

15 6. A tool according to any one of the preceding claims, characterised in that it comprises one or more temperature sensors.

20 7. A tool according to any one of the preceding claims, characterised in that the distance (4) between two tracks amounts to < 6 mm, preferably < 4 mm.

25 8. A tool according to any one of the preceding claims, characterised in that the heating element is a printed circuit board.

30 9. A tool according to any one of claims 1-7, characterised in that the heating element is a heating film.

10. A tool according to any one of the preceding claims, characterised in that an electrically insulating layer

- 23 -

(7) is arranged between the first shaped article (1) and the second shaped article (5).

11. A tool according to any one of the preceding claims,
5 characterised in that the third shaped article (6) comprises heat insulation or consists of a heat-insulating material.

12. A tool according to any one of the preceding claims,
10 characterised in that a resilient layer (8) is arranged between the first shaped article (1) and the third shaped article (6) or in that the third shaped article (6) consists of a resilient material.

15 13. A tool according to any one of the preceding claims, characterised in that the second shaped article (5) consists substantially of aluminium or an aluminium alloy.

20 14. A tool according to any one of the preceding claims, characterised in that it comprises at least one first shaped article (1) and a plurality of second shaped articles (5).

25 15. A tool according to any one of the preceding claims, characterised in that it comprises at least one track (2) per second shaped article (5).

30 16. A tool according to any one of the preceding claims, characterised in that it is part of a preheating, thermoforming or sealing station.

- 24 -

17. A method of heating the tools or the film in a thermoforming or sealing station of a packaging machine with a tool according to any one of the preceding claims, characterised in that an electrical voltage is applied to the track(s) (2) of the first shaped article (1).

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18. A method according to claim 13, characterised in that the voltage amounts to < 70 V.

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19. A method according to claim 13 or 14, characterised in that the heating power is controlled with an impulse welding controller by measuring heat conductor resistance and/or with a temperature sensor.

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20. A method for resetting a tool for a packaging machine, characterised in that control of the temperature distribution of the heat conductor of the tool is reprogrammed and in that optionally the second shaped article(s) (5) of the tool is/are exchanged.

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